

- Gasteruption assectator* (L.) reared from cells of *Hylaeus* sp. Nevada: Verdi.  
*Chrysis irwini* Bohart reared from cells of Eumenidae. California: Boca.  
*Grotea mexicana* Cresson reared from cells of *Ceratina* sp. Mexico: Tuxpan.  
*Dibrachys* sp. reared from cells of *Trypoxylon* sp.  
*Sphaerophthalma (Photopsis) nixonensis* Ferguson reared from cells of *Proteriades* sp. Nevada: Nixon.

## CHALCIDOIDEA

- Perilampus hyalinus* complex reared from *Amobia floridensis* Townsend (Sarcophagidae). Nevada: Verdi.  
*Eurytoma* sp. reared from *Chrysis* sp. (Chrysididae). Nevada: Verdi.  
*Eurytoma stigma* Ashmead reared from *Trichrysis doriae* (Gribodo), *Chrysis parkeri* Moore (Chrysididae). Nevada: Verdi.  
*Dibrachys* sp. reared from *Chrysis derivata* Buysson (Chrysididae). Nevada: Verdi.  
*Dibrachys cavus* (Walker) reared from *Amobia floridensis* Townsend (Sarcophagidae). Nevada: Verdi.  
*Epistenia* sp. reared from *Stelis sexmaculata* Ashmead (Megachilidae); *Chrysis* sp., *Trichrysis* sp. (Chrysididae). Nevada: Verdi, Mustang.  
*Microdontomerus anthidii* (Ashmead) reared from *Stelis sexmaculata* Ashmead (Megachilidae). Nevada: Nixon.  
*Diomorus zabriskiei* Cresson reared from *Omalus* sp. (Chrysididae). Nevada: Verdi.  
*Perilampus* sp. reared from *Omalus janus* (Haldeman) (Chrysididae). Nevada: Verdi.  
*Tetrastichus* sp. reared from Sarcophagidae. Nevada: Nixon.  
*Leucospis affinis* Say reared from *Stelis sexmaculata* Ashmead (Megachilidae);  
*Sapyga pumila* Cresson (Sapygidae). Nevada: Nixon, Mustang, Patrick.

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### Immature and Mating Behavior of *Neocompsa alacris* (Bates)

(Coleoptera : Cerambycidae)

JOHN A. CHEMSAK

*University of California, Berkeley*

The tribe Ibidionini is represented by a large number of species and is found predominantly in the Neotropics. Information on biology and habits is lacking for the vast majority of the group and host plant associations are known for only a few species.

*Neocompsa alacris*, a species commonly attracted to light in Mexico, occurs from Sonora to Oaxaca. On the west coast of Mexico, at least, it is found in association with the thorn forests from June to September. During the summer of 1965 from late June to early July, this species was found in dead wood of *Lonchocarpus* (Leguminosae), 5 miles north of Mazatlán, Sinaloa, Mexico. The area is a typical thorn forest



Fig. 1. Pupal chambers of *Neocompsa alacris* (Bates) in sticks of *Lonchocarpus*. Left, 3  $\times$ ; right, 2  $\times$ .

of the region within sight of the beach. As of 26 June of this year, the summer rains had not begun and the vegetation was totally devoid of leaves. Examination of dead, fallen trees of *Lonchocarpus* revealed the presence of fully formed, unemerged adults of *N. alacris* in pupal chambers within the wood. The infested trees were small, about 2 to 4 decimeters in diameter, and probably had been cut at least 2 years ago. The bark was firm and the wood well consolidated. Samples of the wood were collected and adults emerged within a month.

The larvae begin feeding under the bark, shallowly scoring the wood. The gallery is meandering and filled with fine, packed frass. The heartwood is entered to varying depths depending on the condition

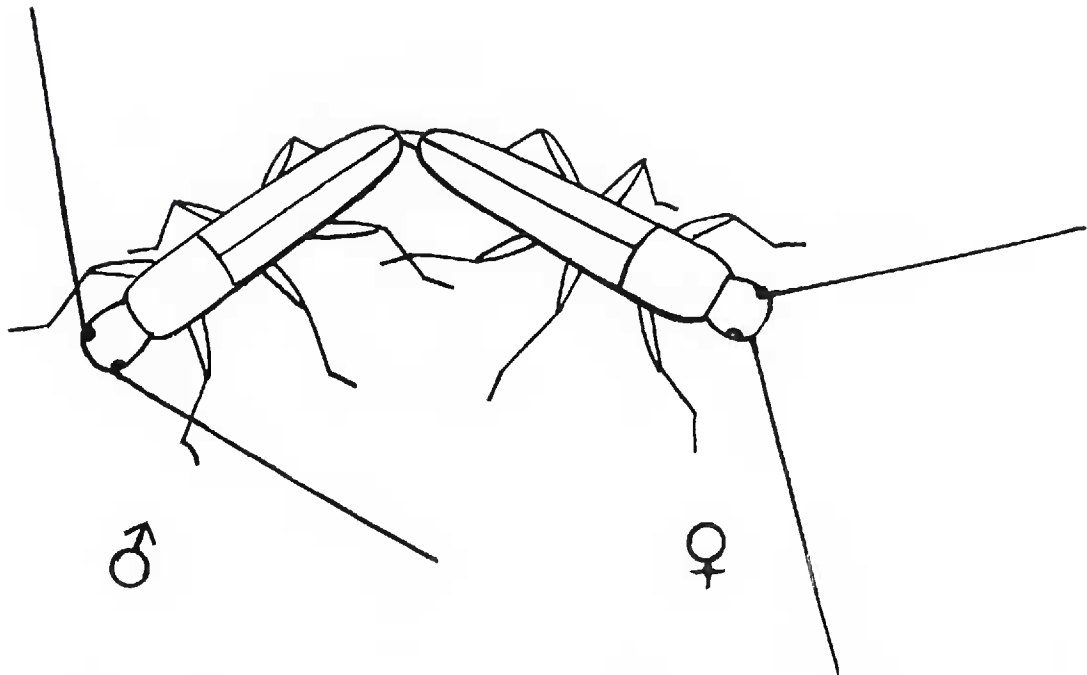


Fig. 2. Mating position of *N. alacris* after initial joining is accomplished.

and availability of sound wood. Feeding apparently continues parallel with the grain of the wood. At the termination of feeding an elongate pupal chamber is constructed (Fig. 1). Depth of the chamber with reference to the outside varied from 1–2 mm to 1–2 decimeters. Usually the chambers are 15–20 mm long and 3–5 mm wide. The base is tightly plugged with fine powdery frass and adults emerged through the apical end by chewing their way to the surface.

Adult emergence is apparently synchronized with the onset of the summer rains. At the time of these observations, adults in pupal chambers were fully colored and capable of flying away as the wood was split. The first rain in the area fell on 1 July and a few days later adults were taken at lights. Very few larvae were encountered in the numerous samples examined and in every case these were inside of pupal chambers. There is apparently a single generation per year with development from egg to adult requiring one year.

Mating behavior was observed in freshly emerged adults in the laboratory. These were placed in either cardboard containers or in glass-topped drawers containing sections of the host plant, *Lonchocarpus*. The male showed little interest in the female when first introduced. After the initial physical contact, however, he became stimulated and began a rapid searching behavior until the female was again contacted. The female was mounted in the typical manner with the front legs around her pronotum and the other two pairs on the substrate. The male immediately began to “lick” the front margins of the females’ pronotum and attempted to join by arching the abdomen under. The

phallus was forced in between the apical abdominal sclerites of the female and coupled with her genitalia. After successfully joining, the male dismounted and an end-to-end position was assumed (Fig. 2). In this position the male antennae are laid backward and those of the female forward and out. While still joined opposite each other, the male was observed to "bow" his head and pronotum a number of times and the hind legs were flexed. These actions were repeated in rapid succession at first and gradually tapered off until the female broke contact. The time of copula was about 1 minute in one pair and 3-4 minutes in another. After uncoupling, the female wandered off but the male remained motionless for some time and cleaned his legs and antennae by drawing them through his mouth in a manner similar to roaches.

Although adults of *N. alacris* are generally nocturnal, they have been collected on flowers of *Buddleia wrightii* and *Jathropa curcas* during the day. Generally, however, they rest on twigs and branches and probably in other niches until nightfall. During periods of inactivity, the antennae are laid straight ahead of the body and curving slightly. The undersides of branches seem to be preferred for resting.

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#### RECENT LITERATURE

ANNOTATED LIST OF THE DIPLOPODA OF CALIFORNIA. By John S. Buckett. Cover + 34 pp. [pp. 6-29 with verso blank]. Privately published. Available from the author, 711 Boyer Circle, Davis, California. December, 1964. Price \$1.25.

This annotated list records nine orders, twenty-three families, eighty genera and one-hundred seventy-eight species and subspecies of millipeds from California. For each species the type depository, type locality, and range in California is given. According to the author this list was compiled primarily from the "Checklist of the Millipeds of North America" by Chamberlin and Hoffman, 1958; however, there are many additions and corrections.—P. H. ARNAUD, JR., *California Academy of Sciences, San Francisco*.